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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/616,862

07/10/2003

Bruce Gregory Warren

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EMULEX DESIGN & MANUFACTURING CORPORATION  
C/O MORRISON & FOERSTER LLP  
555 WEST FIFTH STREET, SUITE 3500  
LOS ANGELES, CA 90013

EXAMINER

SONI, KETAN S

ART UNIT

PAPER NUMBER

2616

MAIL DATE

DELIVERY MODE

07/02/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

Application NO.  
10/616,862Applicant(s)  
WARREN ET AL.

Examiner

Ketan Soni

Art Unit

2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 10 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 05/31/05, 12/7/06
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

#### **Information Disclosure Statement**

The information disclosure statement submitted on Jul 10, 2006 and Nov/12/2004 have been considered by the Examiner and made of record in the application file.

#### **Specification Objections**

The Specifications of the disclosure is objected to because the term "919", and "944" on paragraph [0322] line: 3 for addressing Fig: 16-b and Fig: 16-c reference numeral should be suggested to change "1919" and "1944" respectively. For the prosecution of this application, examiner has considered these terms as addressed above.

Examiner has prosecuted this application with the assumption of the Specifications as mentioned above.

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims **1 -13** are rejected under 35 U.S.C. 102(e) as being anticipated by **Black et al. (US 6614796 B1)**.

Consider **claim: 1**, Black et al. teaches a system for interconnecting Fibre Channel Arbitrated Loop Devices (Fig: 2 @ N1, N2) employing the Fibre Channel Arbitrated Loop protocol (FCAL protocol, col: 3, lines: 15-20) comprising: a plurality of Fibre Channel Arbitrated Loop Ports (Fig: 4 @ 108, 110) each including port logic (col: 26, lines: 1-2 and fig: 7 @ 218, 220), a route determination apparatus (Fig: 5 @ 136), a connectivity apparatus (Fig: 4 @ 102, 104 half bridges, col: 14, line: 111-14), and logic implementing predefined loop control criteria to enforce fairness (Fairness Token circulating to all the ports, col: 7, lines: 35-40) in addition to the access fairness algorithm (all ports can access fairness token because fairness token circulates to all ports on the bus enabling a "round robin" fairness algorithm, col: 17, lines: 28-35).

Consider **claim: 2**, Black et al. teaches a system for interconnecting Fibre Channel Arbitrated Loop Devices of claim 1, wherein the fairness logic serves to limit the number of times a connected device opens another device (fairness token enable bit controls to activate token, col: 38, lines: 18-26; and fairness token position counter, col: 38, lines: 33-39).

Consider **claim: 3**, Black et al. discloses a system for interconnecting Fibre Channel Arbitrated Loop Devices of claim 2, additionally the fairness logic serves to limit the number of times a connected device sequentially opens another device (Each Port's status information about availability or busy status is saved in a local copy of

scoreboard table 125 in memory, col: 14, lines: 34-35; and scoreboard controls the denial or acceptance based on scoreboard table, col: 35, lines: 21-24).

Consider **claim: 4, and 5**, Black et al. discloses a system for interconnecting Fibre Channel Arbitrated Loop Devices of claim 1, further including a counter to count the number of opens (col: 44, lines: 34-36) and the counter counts sequential opens (col: 44, lines: 46-48).

Consider **claim: 6**, Black et al. discloses a system for interconnecting Fibre Channel Arbitrated Loop Devices of claim 1, wherein the logic proactively closes a device (when "CLS" primitive is sent, the conversation ends or closes, col: 4, lines: 10-12; and Upon receipt of "CLS" primitive for closing, source port drops the connection, col: 23, lines: 16).

Consider **claim: 7**, Black et al. discloses a system for interconnecting Fibre Channel Arbitrated Loop Devices of claim 1, wherein the ports are assigned different access priorities (col: 7, lines: 37).

Consider **claim: 8**, Black et al. discloses a system for interconnecting Fibre Channel Arbitrated Loop Devices of claim 1, wherein when a port is granted a connection due to the receipt of an OPN, it is moved to the bottom of the list and the lower priority ports are moved up toward the top of the list (when OPN received by a

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port, its priority changes to "High Priority status" no matter how busy it is, col: 7, lines: 39-44).

Consider **claim: 9**, Black et al. discloses a system for interconnecting Fibre Channel Arbitrated Loop Devices of claim 1, wherein priority levels of fairness are predefined (Fairness Token circulating to all the ports, col: 7, Each port has priority assigned, lines: 35-40, and col: 17, lines: 33-35).

Consider **claim: 10**, Black et al. discloses a system for interconnecting Fibre Channel Arbitrated Loop Devices of claim 9 wherein the predefined levels of fairness include a higher level which wins loop arbitration before the lower levels (col: 9, lines: 6-8).

Consider **claim: 11**, a system for interconnecting Fibre Channel Arbitrated Loop Devices of claim 9 wherein the predefined priority levels are separate from the Fibre Channel Arbitrated Loop address priorities (management software can escalate priority to high which is separate from addressing priorities, col: 38, lines: 12-15).

Consider **claim: 12**, a system for interconnecting Fibre Channel Arbitrated Loop Devices of claim 1, wherein fairness is enforced in a string cascade (connecting o/p of a device to i/p of another device) architecture (Fig: 9 @ 255, 257; in switch mode, loop switches are connected together as shown with the state machine-LPSM).

Consider **claim: 13**, a system for interconnecting Fibre Channel Arbitrated Loop Devices of claim 12 wherein the fairness is enforced in part where a device wins an arbitration when an ARB has traveled between the switch and the interconnected switches on the string (Fig: 9 and col: 41, lines: 36-37).

### **Conclusion**

The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure.

- Kranzler, David A (U.S. Pub/Patent # 6396832) discloses: Method and apparatus for optimizing a switched arbitrated loop for maximum access fairness.
- Berman, Stuart B. (U.S. Pub/Patent # 6,118,776) discloses: Fibre channel arbitrated loop bufferless switch circuitry to increase bandwidth without significant increase in cost
- Black et al. (U.S. Pub/Patent # 7,009,985) discloses: Fibre channel arbitrated loop bufferless switch circuitry to increase bandwidth without significant increase in cost
- Coffey, Aedan Diarmuid Cailean (U.S. Pub/Patent # 2002/0044561) discloses: Cross-point switch for a fibre channel arbitrated loop
- Fiore, Edward J. (U.S. Pub/Patent # 6,999,460) discloses: Arbitrated loop port switching
- Wong et al. (U.S. Pub/Patent # 6,324,181) discloses: Fibre channel switched arbitrated loop

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□ Gallagher et al. (U.S. Pub/Patent # 5,619,497) discloses: Method and apparatus for reordering frames

Any response to this Office Action should be **faxed to** (571) 273-8300 **or mailed to:**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**Hand-delivered responses** should be brought to

Customer Service Window  
Randolph Building  
401 Dulany Street  
Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ketan Soni whose telephone number is (571) 270-1782.

The Examiner can normally be reached on Monday-Thursday from 7:30am to 6:00pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Vanderpuye, Kenneth can be reached on 571-272-3078. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free) or 703-305-3028. If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist/customer service whose telephone number is (571) 272-2600.

Ketan Soni

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Jun 22, 2007.



**KENNETH VANDERPUYE**  
**SUPERVISORY PATENT EXAMINER**